



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-1158; Project Identifier MCAI-2022-00771-E]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Deutschland Ltd & Co KG (Type Certificate previously held by Rolls-Royce plc) Turbopfan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain Rolls-Royce Deutschland Ltd & Co KG (RRD) BR700-710A1-10, BR700-710A2-20, and BR700-710C4-11 model turbopfan engines. This proposed AD was prompted by reports of cracks on certain low-pressure compressor (LPC) rotor (fan) disks. This proposed AD would require initial and repetitive visual inspections of certain LPC rotor fan disks and, depending on the results of the inspections, replacement of any LPC rotor fan disk with cracks detected. This proposed AD would also allow modification of the engine in accordance with RRD service information as a terminating action to these inspections, as specified in a European Union Aviation Safety Agency (EASA) AD, which is proposed for incorporation by reference (IBR). The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [regulations.gov](https://www.regulations.gov). Follow the instructions for submitting comments.
- Fax: (202) 493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1158; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

Material Incorporated by Reference:

- For material that is proposed for IBR in this AD, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; phone +49 221 8999 000; email ADs@easa.europa.eu. You may find this material on the EASA website at ad.easa.europa.eu.

- You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

FOR FURTHER INFORMATION CONTACT: Sungmo Cho, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7241; email: sungmo.d.cho@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2022-1158; Project Identifier MCAI-2022-00771-E” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to [regulations.gov](https://www.regulations.gov), including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Sungmo Cho, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803. Any commentary that the FAA receives that is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

EASA, which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2022-0110, dated June 15, 2022 (EASA AD 2022-0110), to address an unsafe condition for certain RRD BR700-710A1-10, BR700-710A2-20, and BR700-710C4-11 model turbofan engines. The MCAI states that there have been reports of cracks on certain LPC rotor fan disks. The FAA is proposing this AD to prevent failure of the LPC rotor fan or blade. This condition, if not addressed, could result in high energy debris release, damage to the airplane, and reduced control of the airplane.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1158.

FAA's Determination

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the State of Design Authority, the FAA has been notified of the unsafe condition described in the EASA AD. The FAA is issuing this AD after determining that the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Related Service Information under 1 CFR Part 51

The FAA reviewed EASA AD 2022-0110. EASA AD 2022-0110 specifies procedures for initial and repetitive visual inspections of certain LPC rotor fan disks, and replacement of any LPC rotor fan disk with cracks detected.

This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

Other Related Service Information

The FAA reviewed RRD BR700 Series Propulsion System Service Bulletin (SB) SB-BR700-72-101474, Revision 1, dated November 18, 2014 (RRD BR700 Series Propulsion System SB SB-BR700-72-101474); RRD BR700 Series Propulsion System SB SB-BR700-72-101952, Initial Issue, dated December 1, 2016 (RRD BR700 Series Propulsion System SB SB-BR700-72-101952); and RRD BR700 Series Propulsion System SB SB-BR700-72-A900732, Initial Issue, dated June 7, 2022 (RRD BR700 Series Propulsion System SB SB-BR700-72-A900732).

RRD BR700 Series Propulsion System SB-BR700-72-101474 and RRD BR700 Series Propulsion System SB SB-BR700-72-101952 describe procedures for the modification of the engine as a terminating action to the initial and repetitive visual inspections of certain LPC rotor fan disks. RRD BR700 Series Propulsion System SB SB-BR700-72-A900732 specifies procedures for initial and repetitive visual inspections of certain LPC rotor fan disks.

Proposed AD Requirements in this NPRM

This proposed AD would require accomplishing the actions specified in EASA AD 2022-0110, described previously, as incorporated by reference, except for any

differences identified as exceptions in the regulatory text of this proposed AD and except as discussed under “Differences Between this Proposed AD and the EASA AD.”

Differences Between this Proposed AD and the EASA AD

Where EASA AD 2022-0110 requires compliance from its effective date, this proposed AD would require using the effective date of this AD.

This AD does not require compliance with the “Remarks” section of EASA AD 2022-0110.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 2,068 engines installed on airplanes of U.S. Registry.

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Inspect LPC compressor rotor fan disk	4 work-hours x \$85 per hour = \$340	\$0	\$340	\$703,120

The FAA estimates the following costs to do any necessary replacements that would be required based on the results of the proposed inspection. The agency has no way of determining the number of aircraft that might need these replacements:

On-condition costs

Action	Labor Cost	Parts Cost	Cost per product
Replace LPC compressor rotor fan disk	10 work-hours x \$85 per hour = \$850	\$470,000	\$470,850

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency’s authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

Rolls-Royce Deutschland Ltd & Co KG (Type Certificate previously held by

Rolls-Royce plc): Docket No. FAA-2022-1158; Project Identifier MCAI-2022-00771-E.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Rolls-Royce Deutschland Ltd & Co KG (RRD) BR700-710A1-10, BR700-710A2-20, and BR700-710C4-11 model turbofan engines as identified in European Union Aviation Safety Agency AD 2022-0110, dated June 15, 2022 (EASA AD 2022-0110).

(d) Subject

Joint Aircraft Service Component (JASC) Code 7230, Turbine Engine Compressor Section.

(e) Unsafe Condition

This AD was prompted by reports of cracks on certain low-pressure compressor (LPC) rotor (fan) disks. The FAA is issuing this AD to prevent failure of the LPC rotor fan or blade. The unsafe condition, if not addressed, could result in high energy debris release, damage to the airplane, and reduced control of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

Except as specified in paragraphs (h) and (i) of this AD: Perform all required actions within the compliance times specified in, and in accordance with, EASA AD 2022-0110.

(h) Exceptions to EASA AD 2022-0110

(1) Where EASA AD 2022-0110 requires compliance from its effective date, this AD requires using the effective date of this AD.

(2) The “Remarks” section of EASA AD 2022-0110 is not incorporated by reference in this AD.

(i) No Reporting Requirement

Although the service information referenced in EASA AD 2022-0110 specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(j) Alternative Methods of Compliance (AMOCs)

The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in § 39.19. In accordance with § 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (k)(2) of this AD or email to: ANE-AD-AMOC@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Additional Information

(1) For service information identified in EASA AD 2022-0110, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, DE24 8BJ, United Kingdom; phone: +44 (0)1332 242424; fax: +44 (0)1332 249936; website: rolls-royce.com/contact-us.aspx.

(2) For more information about this AD, contact Sungmo Cho, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7241; email: sungmo.d.cho@faa.gov.

(l) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) European Union Aviation Safety Agency AD 2022-0110, dated June 15, 2022.

(ii) [Reserved]

(3) You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

(4) You may view this material that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on September 7, 2022.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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